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PTO/SB/05 (11-00)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 678-1256 (P10487)

First Inventor Vahid TAROKH

Title APPARATUS AND METHOD FOR TRANS.....

Express Mail Label No. EV 333229165 US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)

2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.

3. ☒ Specification [Total Pages 26]  
(preferred arrangement set forth below)  
- Descriptive title of the invention  
- Cross Reference to Related Applications  
- Statement Regarding Fed sponsored R & D  
- Reference to sequence listing, a table,  
or a computer program listing appendix  
- Background of the Invention  
- Brief Summary of the Invention  
- Brief Description of the Drawings (if filed)  
- Detailed Description  
- Claim(s)  
- Abstract of the Disclosure

4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 6]

5. Oath or Declaration [Total Pages 6]

a. ☒ Newly executed (original or copy)  
b. ☐ Copy from a prior application (37 CFR 1.63 (d))  
(for continuation/divisional with Box 18 completed)

i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).

6. ☒ Application Data Sheet. See 37 CFR 1.76

7. ☐ CD-ROM or CD-R in duplicate, large table or  
Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)

a. ☐ Computer Readable Form (CRF)

b. Specification Sequence Listing on:

i. ☐ CD-ROM or CD-R (2 copies); or

ii. ☐ paper

c. ☐ Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))

10. ☐ 37 CFR 3.73(b) Statement [Power of Attorney]  
(when there is an assignee)

11. ☐ English Translation Document (if applicable)

12. ☒ Information Disclosure Statement (IDS)/PTO-1449 [Copies of IDS Citations]

13. ☐ Preliminary Amendment

14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)

15. ☒ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)

16. ☐ Request and Certification under 35 U.S.C. 122  
(b)(2)(B)(i). Applicant must attach form PTO/SB/35  
or its equivalent.

17. ☒ Other: Check for \$834.00 & \$40.00

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment,  
or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

Prior application information:

Examiner

of prior application No.:

Group Art Unit:

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under  
Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference.  
The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label:

(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

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State

New York

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Name (Print/Type) Paul J. Farrell

Registration No. (Attorney/Agent) 33,494

Signature

Date 9/30/03

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope  
as "Express Mail Post Office to Addressee" Mail Label Number EV 333229165 US addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box  
1450, Alexandria, VA 22313-1450.

Dated: September 30, 2003

John F. Gallagher III

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# FEE TRANSMITTAL

## for FY 2003

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 874.00)

## Complete if Known

Application Number	not yet known
Filing Date	herewith
First Named Inventor	Vahid TAROKH
Examiner Name	not yet known
Art Unit	not yet assigned
Attorney Docket No.	678-1256 (P10487)

## METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☐ Deposit Account:Deposit  
Account  
Number  
Deposit  
Account  
Name

04-1121

Dilworth &amp; Barrese LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) during the pendency of this application☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity Fee Code	Small Entity Fee Code	Fee Description	Fee Paid
1001 750	2001 375	Utility filing fee	750.00
1002 330	2002 165	Design filing fee	
1003 520	2003 260	Plant filing fee	
1004 750	2004 375	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$ 750.00)

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
12	-20** = 0	0.00	0.00
4	-3** = 1	84.00	84.00
Independent Claims			
Multiple Dependent			

Large Entity Fee Code	Small Entity Fee Code	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 84	2201 42	Independent claims in excess of 3
1203 280	2203 140	Multiple dependent claim, if not paid
1204 84	2204 42	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 84.00)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051 130		2051 65		Surcharge - late filing fee or oath	
1052 50		2052 25		Surcharge - late provisional filing fee or cover sheet	
1053 130		1053 130		Non-English specification	
1812 2,520		1812 2,520		For filing a request for ex parte reexamination	
1804 920*		1804 920*		Requesting publication of SIR prior to Examiner action	
1805 1,840*		1805 1,840*		Requesting publication of SIR after Examiner action	
1251 110		2251 55		Extension for reply within first month	
1252 410		2252 205		Extension for reply within second month	
1253 930		2253 465		Extension for reply within third month	
1254 1,450		2254 725		Extension for reply within fourth month	
1255 1,970		2255 985		Extension for reply within fifth month	
1401 320		2401 160		Notice of Appeal	
1402 320		2402 160		Filing a brief in support of an appeal	
1403 280		2403 140		Request for oral hearing	
1451 1,510		1451 1,510		Petition to institute a public use proceeding	
1452 110		2452 55		Petition to revive - unavoidable	
1453 1,300		2453 650		Petition to revive - unintentional	
1501 1,300		2501 650		Utility issue fee (or reissue)	
1502 470		2502 235		Design issue fee	
1503 630		2503 315		Plant issue fee	
1460 130		1460 130		Petitions to the Commissioner	
1807 50		1807 50		Processing fee under 37 CFR 1.17(q)	
1806 180		1806 180		Submission of Information Disclosure Stmt	
8021 40		8021 40		Recording each patent assignment per property (times number of properties)	40
1809 750		2809 375		Filing a submission after final rejection (37 CFR 1.129(a))	
1810 750		2810 375		For each additional invention to be examined (37 CFR 1.129(b))	
1801 750		2801 375		Request for Continued Examination (RCE)	
1802 900		1802 900		Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

## SUBMITTED BY

(Complete if applicable)

Name (Print/Type)

Paul J. Farrell

Registration No.  
(Attorney/Agent)

33,494

Telephone

(516) 228-8484

Signature

Date

9/30/03

## CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV 333229165US addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: September 30, 2003

John F. Gallagher III

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**UTILITY APPLICATION DATA SHEET UNDER 37 C.F.R. §1.76**

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): Vahid TAROKH, Jae-Hak CHUNG, Chan-Soo HWANG, Yung-Soo KIM

For: **APPARATUS AND METHOD FOR TRANSMITTING AND RECEIVING  
SIGNALS USING MULTIPLE ANTENNAS IN MOBILE COMMUNICATION  
SYSTEMS**

Enclosed are:

- ☒ 22 page(s) of specification
- ☒ 1 page(s) of Abstract
- ☒ 3 page(s) of claims
- ☒ 6 sheets of drawings ☒ formal ☐ informal
- ☒ 6 page(s) of Declaration and Power of Attorney

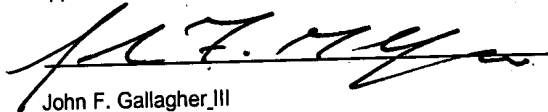
ASSIGNEE NAME: SAMSUNG ELECTRONICS CO., LTD.

ASSIGNEE RESIDENCE: KYUNGKI-DO, KOREA

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**CERTIFICATION UNDER 37 C.F.R. § 1.10**

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date September 30, 2003 in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV 333229165 US addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
John F. Gallagher, III

☐ This application claims the benefit under 35 U.S.C. §119(e) of U.S. Provisional Application(s) No(s):

APPLICATION NO(S): FILING DATE

\_\_\_\_\_  
\_\_\_\_\_

☒ Certified copy of application

<u>Country</u>	<u>Appln. No.</u>	<u>Filed</u>
<u>Korea</u>	<u>59621/2002</u>	<u>September 30, 2002</u>

from which priority under Title 35 United States Code, § 119 is claimed

☒ is enclosed.

☐ will follow.

**CALCULATION OF UTILITY APPLICATION FEE**

For	Number Filed	Number Extra	Rate	Basic Fee \$750.00
TOTAL CLAIMS	12	0	x 18 =	\$ .00
INDEPENDENT CLAIMS	4	1	x 84 =	\$84.00
<input type="checkbox"/> Multiple Dep. Claim			280	\$ .00
				<b>TOTAL \$834.00</b>

☐ Verified Statement of "Small Entity" Status Under 37 C.F.R. § 1.27. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$.

- ☒ The amount of \$40.00 for recording the attached Assignment is enclosed as a separate check.
- ☒ Check in the amount of \$834.00 to cover filing fee is attached.
- ☐ Charge fee to Deposit Account No. 04-1121.  
TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

☒ Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.16 and 1.17, at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 04-1121. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 04-1121 therefor. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Respectfully submitted,

Date: September 30, 2003



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Paul J. Farrell  
Reg. No. 33,494  
Attorney for Applicant

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